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FILE COVERS 1907 - 23 Feb 2004 VOL 140 ISS 9  
FILE LAST UPDATED: 22 Feb 2004 (20040222/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> s prepreg  
9807 PREPREG  
8567 PREPREGS  
L1 12418 PREPREG  
(PREPREG OR PREPREGS)

=> s circuit (l)board  
189136 CIRCUIT  
108624 CIRCUITS  
230141 CIRCUIT  
(CIRCUIT OR CIRCUITS)  
77360 BOARD  
52195 BOARDS  
94363 BOARD  
(BOARD OR BOARDS)  
L2 40966 CIRCUIT (L)BOARD

=> s inorganic(l)binder  
90918 INORGANIC  
268 INORGANICS  
91145 INORGANIC  
(INORGANIC OR INORGANICS)  
240717 INORG  
997 INORGS  
241328 INORG  
(INORG OR INORGS)  
283174 INORGANIC  
(INORGANIC OR INORG)  
157662 BINDER  
75699 BINDERS  
184223 BINDER  
(BINDER OR BINDERS)

L3 10022 INORGANIC(L)BINDER

=> s low melting point glass

2126312 LOW

380 LOWS

2126567 LOW

(LOW OR LOWS)

200495 MELTING

339 MELTINGS

200647 MELTING

(MELTING OR MELTINGS)

545623 POINT

167793 POINTS

679177 POINT

(POINT OR POINTS)

629706 GLASS

119644 GLASSES

655743 GLASS

(GLASS OR GLASSES)

L4 149 LOW MELTING POINT GLASS

(LOW(W) MELTING(W) POINT(W) GLASS)

=> s low(l)melting(l)point(l)glass

2126312 LOW

380 LOWS

2126567 LOW

(LOW OR LOWS)

200495 MELTING

339 MELTINGS

200647 MELTING

(MELTING OR MELTINGS)

545623 POINT

167793 POINTS

679177 POINT

(POINT OR POINTS)

629706 GLASS

119644 GLASSES

655743 GLASS

(GLASS OR GLASSES)

L5 612 LOW(L) MELTING(L) POINT(L) GLASS

=> s glass

629706 GLASS

119644 GLASSES

L6 655743 GLASS

(GLASS OR GLASSES)

=> d his

(FILE 'HOME' ENTERED AT 11:58:11 ON 23 FEB 2004)

FILE 'CAPLUS' ENTERED AT 11:58:25 ON 23 FEB 2004

L1 12418 S PREPREG

L2 40966 S CIRCUIT (L) BOARD

L3 10022 S INORGANIC(L)BINDER

L4 149 S LOW MELTING POINT GLASS

L5 612 S LOW(L) MELTING(L) POINT(L) GLASS

L6 655743 S GLASS

=> s l1 and l3

L7 31 L1 AND L3

=> s l1 and l5

L8 0 L1 AND L5

=> s l1 and l4  
L9 0 L1 AND L4

=> s l1 and l6  
L10 6108 L1 AND L6

=> s l10 and l5  
L11 0 L10 AND L5

=> s l2 and l3  
L12 117 L2 AND L3

=> s l12 and l4  
L13 0 L12 AND L4

=> s l12 and l5  
L14 0 L12 AND L5

=> d l7 1-31 bib,abs

L7 ANSWER 1 OF 31 CAPLUS COPYRIGHT 2004 ACS on STN  
AN 2004:118185 CAPLUS  
TI Fiber sheets and production methods therefor and **prepregs** and laminates therewith  
IN Nishikiori, Yoshiharu; Terao, Tomoyuki  
PA Oji Paper Co., Ltd., Japan  
SO Jpn. Kokai Tokkyo Koho, 13 pp.  
CODEN: JKXXAF  
DT Patent  
LA Japanese  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2004043984	A2	20040212	JP 2002-199368	20020709
PRAI	JP 2002-199368		20020709		
AB	Fibers are coated with porous compns. containing <b>inorg. binders</b> (alkoxysilanes precursors and hydrolyzates) and <b>inorg. pigments</b> (spherical silica and silica gel) and used to prepare <b>prepregs</b> . Thus, a sheet of E glass fiber chops was coated with dibenzylldimethoxysilane-Et silicate-KC 89S-phenyltrimethoxysilane copolymer containing Snowtex O, dried, and heated to prepare a nonwoven fabric.				

L7 ANSWER 2 OF 31 CAPLUS COPYRIGHT 2004 ACS on STN  
AN 2003:918643 CAPLUS  
DN 139:384915  
TI Inorganic sheets reinforced with glass fiber nonwoven textiles, their manufacture, and glass fiber **prepreg** sheets  
IN Higashiyama, Hideyuki; Shimeno, Koichi  
PA Asahi Fiber Glass Co., Ltd., Japan  
SO Jpn. Kokai Tokkyo Koho, 9 pp.  
CODEN: JKXXAF

DT Patent  
LA Japanese  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2003335569	A2	20031125	JP 2002-141275	20020516
PRAI	JP 2002-141275		20020516		
AB	The title <b>inorg.</b> sheets comprise laminates of glass fiber nonwoven textiles impregnated with <b>inorg.</b> matrix containing 100 weight parts metal phosphates and 80-200 weight parts curing agents, in amts. of 30-200 g/m2. The sheets may also contain organic <b>binders</b> , i.e. poly(Me methacrylate) or epoxy resins. The sheets are manufactured by				

lamination of **prepreg** sheets, made by impregnation of glass fiber nonwoven textiles with **inorg.** matrix, followed by heat pressing. Such **prepreg** sheets showing  $\leq 2\%$  coefficient of variation (CV; defined in JIS Z 8101) per 25 cm<sup>2</sup> area are also claimed. The sheets are resistant to flame and fire and are suitable for use as reinforcements in wave absorbers for construction materials, etc.

L7 ANSWER 3 OF 31 CAPLUS COPYRIGHT 2004 ACS on STN

AN 2003:312175 CAPLUS

DN 138:322395

TI Aqueous binders for nonwoven fabrics, nonwoven fabrics for laminated boards, printed circuit boards and dielectric boards therefrom

IN Yokota, Yoshiyuki

PA Nippon Shokubai Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 13 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2003119656	A2	20030423	JP 2001-317381	20011015
PRAI	JP 2001-317381		20011015		

AB The **binders** comprise aqueous epoxy resins containing carboxyl groups, oxazoline resins, **inorg.** microparticles and/or alkoxysilane compds. Heating Light Ester PM, Me methacrylate, Bu acrylate, styrene, methacrylic acid, hydroxyethyl methacrylate, and AIBN in Bu cellosolve at 105° for 2 h, graft reaction with Epikote 1009, neutralization with Et3N and dilution with H2O gave a composition with pH 8.8 and nonvolatiles 30.0%.

Coating a composition containing this composition 50, hexyltriethoxysilane dispersion

(particle size 1.9  $\mu$ m) 20, Epocross WS500 5, and diaminosilane coupling agent 0.2 g was coated on a wet sheet of E glass fiber chopped strands, drying, soaking the resulting nonwoven fabric in an epoxy resin varnish, drying, and hot pressing 4 pieces of the resulting **prepregs** gave a 0.6-mm laminate with good soldering resistance.

L7 ANSWER 4 OF 31 CAPLUS COPYRIGHT 2004 ACS on STN

AN 2001:563816 CAPLUS

DN 135:138426

TI Nonwoven fabrics for laminated boards with improved heat resistance manufactured by forming nonwoven fabrics comprising **binders** containing coupling agent-treated **inorganic** fillers and manufacture thereof and printed circuits therefrom

IN Terao, Tomoyuki; Shinotsuka, Hiroshi

PA Oji Paper Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 6 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2001207367	A2	20010803	JP 2000-18159	20000127
PRAI	JP 2000-18159		20000127		

AB The nonwoven fabrics comprise fiber-to-fiber bonding **binders** added to the fibers in two steps to cause the **binder** added in the final step comprising **binders** containing 10-95% coupling agent-treated **inorg.** fillers. The nonwoven fabrics are prepared by the steps comprising the step of mixing the fibers with **binders** containing no fillers and subsequently mixing the fibers with **binders** containing 10-95% coupling agent-treated **inorg.** fillers comprising 20-100% silica. Chopped glass fiber strands were made into a sheet by the

wet method, spray coated with a **binder** (A) comprising 8:2 mixture of carboxy-modified epoxy resin emulsion and blocked isocyanate emulsion, dried, spray coated with with a mixture comprising A **binder** and 30% (on solids) diaminosilane-treated silica (Aerosil 130), dried, and cured 2 h at 180° to give a nonwoven fabric showing tensile strength 2.4 kg after immersion acetone for 5 min. The nonwoven fabric was immersed in an epoxy resin varnish and dried to give a **prepreg**. A laminate of four of the **prepreg** was pressed at 180° to give a board showing very small swelling on immersion of the laminate in a solder for 20 s at 260°.

L7 ANSWER 5 OF 31 CAPLUS COPYRIGHT 2004 ACS on STN  
 AN 2001:554821 CAPLUS  
 DN 135:138403  
 TI Laminates having high dielectric constant and electric capacity for electronic devices  
 IN Koseki, Takayoshi; Akamatsu, Yoshiyuki; Ezaki, Yoshiaki; Koizumi, Takeshi; Hayashi, Yasuhiro  
 PA Matsushita Electric Works, Ltd., Japan  
 SO Jpn. Kokai Tokkyo Koho, 6 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2001206965	A2	20010731	JP 2000-17580	20000126
PRAI	JP 2000-17580		20000126		

AB The laminates are obtained by applying  $\geq 5$  volume% **inorg.** particles on 20-100  $\mu\text{m}$ -thick glass cloths with **binders**, impregnating the cloths with thermosetting resins and **inorg.** particles, drying the materials to give **prepregs**, and then laminating and molding the **prepregs**. Thus, a glass cloth was coated with a dispersion containing BT 02 (Ba titanate particles) and an epoxy resin **binder**, dried, impregnated with an epoxy resin varnish containing Ba titanate particles, dried, sandwiched between Cu foils, and hot-press molded to give a Cu-clad laminate showing good moldability, dielec. constant 14.9, and elec. capacity 0.264 nF/cm<sup>2</sup>.

L7 ANSWER 6 OF 31 CAPLUS COPYRIGHT 2004 ACS on STN  
 AN 2001:552749 CAPLUS  
 DN 135:145855  
 TI Multilayer **prepreg** boards with high dielectric constant possessing inorganic particles for circuit board substrates  
 IN Kozeki, Takayoshi; Akamatsu, Toshiyuki; Ezaki, Yoshiaki; Koizumi, Takeshi; Hayashi, Yasuhiro  
 PA Matsushita Electric Works, Ltd., Japan  
 SO Jpn. Kokai Tokkyo Koho, 6 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2001205740	A2	20010731	JP 2000-17579	20000126
PRAI	JP 2000-17579		20000126		

AB The boards comprise 20-100- $\mu\text{m}$ -thick flattened glass cloths impregnating thermosetting resins and containing 5-volume% **inorg.** particles. The glass cloths may comprise glass fibers with flat cross-sectional shape.

L7 ANSWER 7 OF 31 CAPLUS COPYRIGHT 2004 ACS on STN  
 AN 2001:218038 CAPLUS  
 DN 134:253375  
 TI Nonwoven fabrics containing organic-inorganic hybrid fibers and their use

as insulative **prepregs** for manufacture of printed circuit board laminates

IN Terao, Tomoyuki; Toyoshima, Setsuo; Demura, Satoshi; Haraguchi, Kazutoshi; Obayashi, Akira

PA Oji Paper Co., Ltd., Japan; Dainippon Ink and Chemicals, Inc.

SO Jpn. Kokai Tokkyo Koho, 11 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2001081685	A2	20010327	JP 1999-258068	19990910
PRAI	JP 1999-258068		19990910		

AB The fabrics with low heat expansion contain organic-**inorg.** hybrid fibers, organic fibers and optionally thermosetting resin **binders** where the hybrid fibers comprise meta-type aromatic polyamides containing 5-65% glass having average particle diameter 8-300 nm and alkali metal content <2%,

or

8-23% layered clay minerals having average coagulation thickness in the thickness direction of <10 nm. Thus, mixing 300 parts a water glass solution (water content 60%) with 43.2 parts m-phenylenediamine in water to give 1200 mL aqueous solution containing 100 g/L water glass, and mixing with a

solution of

81.2 parts isophthalic chloride in THF (total 1200 mL) gave a composite powder (glass content 48%), 125 parts of which was combined with 175 parts poly(m-phenylene isophthalamide) powder, mixed with 3200 mL N-methyl-2-pyrrolidone with heating, dropped into water, isolated as

precipitate

and washed to give hybrid fibers with average diameter 20 nm and glass content 20%. Wet laying the hybrid fibers with p-aramid fibers at a weight ratio 95:5, drying, hot-calendering at 325° and 170 kg/cm linear pressure, impregnating with a brominated bisphenol A epoxy resin varnish and drying gave **prepregs** with resin content 54%, which were laminated as usual in 12 layers to give a laminated board.

L7 ANSWER 8 OF 31 CAPLUS COPYRIGHT 2004 ACS on STN

AN 2000:592493 CAPLUS

DN 133:186474

TI Nonwoven fabric material and **prepreg** for circuit board

IN Echigo, Fumio; Kawakita, Yoshihiro

PA Matsushita Electric Industrial Co., Ltd., Japan

SO Eur. Pat. Appl., 17 pp.

CODEN: EPXXDW

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1030543	A1	20000823	EP 2000-103237	20000217
	EP 1030543	B1	20040107		

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO

JP 2000239995 A2 20000905 JP 1999-41208 19990219

US 2003045164 A1 20030306 US 2000-506318 20000217

PRAI JP 1999-41208 A 19990219

AB The present invention provides a nonwoven fabric material prepared from short fibers (1) including thermal-resistant synthetic fibers bound with an **inorg. binder** (2), a **prepreg** and a circuit board using the same. The circuit board has an excellent dimensional stability even at a high temperature, and the circuit board is prevented from warping or being damaged by moisture absorption or the like. The **inorg. binder** (2) is a residue formed from a low m.p. glass solution or a H2O-dispersible colloidal solution including at

least either fibers or particles of low m.p. glass dispersed therein. When the **binder** was used, a chemical covalent bonding by a siloxane bonding is formed.

RE.CNT 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 9 OF 31 CAPLUS COPYRIGHT 2004 ACS on STN  
AN 1999:677684 CAPLUS  
DN 131:261031  
TI Method for manufacture of wheel hubs of motorcycles  
IN Zhou, Yaomin; Zhang, Guoding; Wang, Wenlong; Fei, Zhuming; Zhang, Zenggu; Zhu, Xiaoyin; Zhou, Fengchu  
PA Shanghai Jiaotong University, Peop. Rep. China  
SO Faming Zhuanli Shenqing Gongkai Shuomingshu, 5 pp.  
CODEN: CNXXEV  
DT Patent  
LA Chinese  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	CN 1128184	A	19960807	CN 1995-111699	19950719
PRAI	CN 1995-111699		19950719		

AB The method comprises: (1) preparation of a cylindrical **prepreg** from **inorg.** short fibers having an aspect ratio 5-100 (and a **binder**) by press forming in vacuum, drying at 80-120°, holding at 120-400°, and sintering at 500-1000°, (2) preparation of a composite blank containing 5-25% **inorg.** short fibers by infiltrating the prepared **prepreg** at 680-850° and 100-1000 MPa in a mold preheated to 200-400°, (3) formation of hoops by extrusion the composite blank in a mold preheated to 350-500° at 100-500 tons and cutting, and (4) formation of hubs by placing a hoop on the core in a mold and pressure casting an Al alloy at 680-850° and 100-1000 MPa. The composite blank may be an **inorg.** particle-reinforced Al alloy composite.

L7 ANSWER 10 OF 31 CAPLUS COPYRIGHT 2004 ACS on STN  
AN 1999:633664 CAPLUS  
DN 131:258707  
TI Nonwoven fabrics coated with thermoplastic binders containing fillers for laminated nonwoven fabrics with low heat expansion coefficient and improved through-hole reliability  
IN Shinozuka, Hiroshi  
PA Oji Paper Co., Ltd., Japan  
SO Jpn. Kokai Tokkyo Koho, 7 pp.  
CODEN: JKXXAF  
DT Patent  
LA Japanese  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 11269752	A2	19991005	JP 1998-65699	19980316
PRAI	JP 1998-65699		19980316		

AB The nonwoven fabrics are prepared by coating nonwoven fabrics mainly comprising fibers (A) with heat decomposition temperature  $\geq 260^\circ$  and **binders** (B) comprising thermosetting resin **binders** or **inorg. binders** with mixts. comprising thermoplastic **binders** (C) having m.p.  $\leq 130^\circ$  and fillers (D) to give nonwoven fabrics with A content (on sum of weight of A and D) 5-80%, D content 20-95% (on sum of weight of A and D) 20-95%, B content 3-20% (on A), and C content 3-20% (on D) 3-20%. The nonwoven fabrics are useful for printed circuit boards and elec. insulating boards. A nonwoven sheet of glass fibers with softening temperature  $846^\circ$  was prepared, spray coated with 10:0.1 (weight ratio, as effective component) mixture of an acrylic polymer emulsion and a silane coupling agent, dried, coated with 94:6 (weight



ratio, as effective component) mixture of potassium titanate (I) whisker and a polyolefin emulsion (m.p. 90°), and dried to give a nonwoven fabric containing 80 parts I whisker per 20 parts glass fibers. A laminate of five of the nonwoven was sandwiched between two glass cloths, impregnated with an epoxy resin varnish, cured 5 min at 140° to form a **prepreg**, sandwiched between two Cu foils, and pressed 1 h at 165° to give a Cu-clad laminate exhibiting heat expansion coefficient 37 ppm/° and showing number of cycles required for variation of elec. resistance >10% 178 on immersion of a test piece having 200 through-holes in an oil for 10 s at 260° and subsequently immersing the test piece in H2O for 10 s at 20° and repeating the process.

L7 ANSWER 11 OF 31 CAPLUS COPYRIGHT 2004 ACS on STN

AN 1999:480996 CAPLUS

DN 131:130968

TI Resin sheets containing epoxy resin particles, and multilayer printed circuit boards with low dielectric constant

IN Ishigami, Tomio; Murai, Akira; Sakai, Koji

PA Hitachi Chemical Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 4 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 11207851	A2	19990803	JP 1998-17568	19980129
PRAI	JP 1998-17568		19980129		

AB The sheets comprise (A) **inorg.** fibers formed into nonwoven fabrics using curable **binder** resins and (B) uncured solid epoxy resin particles, which are dispersed in A and show specific permittivity  $\geq 3.7$  after hardening. Thus, a mixture of Sumiepoxy LDX 4127 (epoxy resin particle), PP 700-300 (phenolic resin hardener), and 2-ethyl-4-methylimidazole was crushed, added to an aqueous glass fiber slurry, formed into a sheet, sprayed with a **binder** containing HTR 600LB (thermosetting acrylic resin emulsion) 100, Melan X 66 (melamine resin) 10, and p-MeC6H4SO3H 0.3 part, and heated to give a sheet. A Cu-clad printed circuit board was hot-pressed with Cu foil via the sheet to give a 4-layer printed circuit board showing specific permittivity 3.8.

L7 ANSWER 12 OF 31 CAPLUS COPYRIGHT 2004 ACS on STN

AN 1998:70970 CAPLUS

DN 128:122545

TI **Prepreg** and printed wiring board.

IN Tsuneoka, Yoshihide; Nishiyama, Tosaku; Saita, Masahiro

PA Matsushita Electric Industrial Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 28 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 10022673	A2	19980123	JP 1996-168749	19960628
PRAI	JP 1996-168749		19960628		

AB A **prepreg** comprises a core material impregnated with a **binder** containing magnetic particles and nonmagnetic **inorg.** particles or a **prepreg** coated with a **binder** containing magnetic particles and nonmagnetic **inorg.** particles. A printed wiring board free of warping is also described, which is fabricated from the **prepreg** and shows a good electromagnetic shielding property.

L7 ANSWER 13 OF 31 CAPLUS COPYRIGHT 2004 ACS on STN

AN 1998:62507 CAPLUS

DN 128:118198  
TI Method for manufacture of metal laminates for printed circuit boards  
IN Sakai, Koji; Nakamura, Yoshihiro; Murai, Akira; Iijima, Toshiyuki  
PA Hitachi Chemical Co., Ltd., Japan  
SO Jpn. Kokai Tokkyo Koho, 4 pp.  
CODEN: JKXXAF

DT Patent  
LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 10016131	A2	19980120	JP 1996-173573	19960703
PRAI	JP 1996-173573		19960703		

AB The method comprises hot-press bonding a metal foil to a resin substrate through an adhesive mixture containing an uncured powdered thermosetting resin dispersed in **inorg.** fibers. The resin substrate is manufactured by preparing a **prepreg** from a slurry of an **inorg.** fiber and an uncured powdered thermosetting resin by paper making, coating the sheet with a hardenable **binder** resin, and heating for drying.

L7 ANSWER 14 OF 31 CAPLUS COPYRIGHT 2004 ACS on STN  
AN 1997:732482 CAPLUS  
DN 128:9551

TI Glass cloth supporting inorganic particle for electronic device  
IN Kimura, Yasuyuki; Gondo, Yoshinobu  
PA Asahi-Schwebel Co., Ltd., Japan  
SO Jpn. Kokai Tokkyo Koho, 6 pp.  
CODEN: JKXXAF

DT Patent  
LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 09291473	A2	19971111	JP 1996-123904	19960423
PRAI	JP 1996-123904		19960423		

AB The glass cloth has  $\geq 5$  volume% an **inorg.** particle, which is fixed by using a **binder**. The cloth showing uniform dielec. constant, improved dimensional stability, and improved mech. strength is useful for manufacture of an elec. insulator plate or a printed circuit.

L7 ANSWER 15 OF 31 CAPLUS COPYRIGHT 2004 ACS on STN  
AN 1997:264664 CAPLUS  
DN 126:239505

TI Artificial stones obtained from regenerated glass fiber **prepregs**  
IN Iida, Katsuya; Nishihara, Hiroaki; Taido, Susumu  
PA Sumitomo Bakelite Co., Ltd., Japan  
SO Jpn. Kokai Tokkyo Koho, 2 pp.  
CODEN: JKXXAF

DT Patent  
LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 09052750	A2	19970225	JP 1995-205927	19950811
PRAI	JP 1995-205927		19950811		

AB The stones contain crushed glass fiber-supported synthetic resin laminates and are bonded with **inorg. binders**. Thus, a waste of epoxy resin Cu clad laminate was soaked in H<sub>2</sub>SO<sub>4</sub>, washed, dried, and crushed to give particles, 1000 parts of which was blended with 1000 parts a ceramic **binder** and 600 parts H<sub>2</sub>O, filled in a box, and left for 2 days to give an artificial marble.

L7 ANSWER 16 OF 31 CAPLUS COPYRIGHT 2004 ACS on STN  
AN 1997:127268 CAPLUS

DN 126:134423  
 TI Laminate with stretched copper foil on its surface, printed circuit board using the laminate, and method for manufacture of the laminate  
 IN Yokono, Ataru; Yokono, Haruki; Miama, Masahiro; Narishima, Ryoichi; Iida, Takuya; Endo, Yasuhiro  
 PA Nippon Denkai Kk, Japan  
 SO Jpn. Kokai Tokkyo Koho, 24 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 08309918	A2	19961126	JP 1995-122587	19950522
PRAI	JP 1995-122587		19950522		

AB In bonding a Cu foil to insulating substrate, the foil is coated with an adhesive primer layer and then with an adhesive which provide for high bonding strength with the substrate without roughening the foil surface. The primer layer consists of a thiol coupling agent or a silane coupling agent QRSiXYZ (where Q is a functional group reacting with a peroxide-curable resin composition, R is a bonding group linking Q to a Si atom, X, Y, and Z are hydrolyzable groups or hydroxyl groups bonded to a Si atom). The **binder** consists of a peroxide curable resin composition based on polyethylene or ethylene- $\alpha$ -olefin copolymer or ethylene- $\alpha$ -olefine diene terpolymer. The surface of the Cu foil may be precoated with B, Al, P, Zn, Ti, V, Cr, Mn, Fe, Co, Ni, Ag, In, Zr, Sn, Nb, Mo, Ru, Rh, Pd, Pb, Ta, W, Ir, Pt, or their alloys, oxides, hydroxides, or hydrates. The substrate is preferably a **prepreg** prepared by infiltrating a fabric made of **inorg.** or organic fibers with a thermosetting resin, or a polyimide or polyester film.

L7 ANSWER 17 OF 31 CAPLUS COPYRIGHT 2004 ACS on STN  
 AN 1996:567243 CAPLUS  
 DN 125:202947

TI Manufacture of textile-reinforced molds for use in molding, and of **prepregs** for use in manufacture of the molds, and the ceramic and thermoset molds and rotationally molded articles obtained  
 IN Moulton, Richard; Dixon, Doyle; Stevens, Robert L.; Siewert, Gregg; MacDougall, Gary Douglas  
 PA Logic Tools L.L.C., USA  
 SO PCT Int. Appl., 44 pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA English  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9621547	A1	19960718	WO 1996-US516	19960111
	W: AL, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI				
	RW: KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD				
	US 5632925	A	19970527	US 1995-370686	19950110
	AU 9648565	A1	19960731	AU 1996-48565	19960111
PRAI	US 1995-370686		19950110		
	WO 1996-US516		19960111		

AB The molds are manufactured by forming multiply preform composites comprising a preceramic polymeric resin matrix, a heat-resistant reinforcing textile substrate, and  $\geq 1$  **binders**, and curing the preform composites at a temperature ranging from ambient temperature to 350 °F on a plug to form a thermoset mold. The **prepregs** are manufactured by

forming ply composites comprising a preceramic polymeric resin matrix, a heat-resistant reinforcing textile substrate, and  $\geq 1$  **binders**, and preserving the the ply for later use. The molds are shaped bodies of successive layers of a combination of **inorg.** materials and **binders** generally used in the formation of ceramics, and a reinforcing textile substrate within the **inorg.** materials. The mold is a rotational mold in the shape of a boat hull.

L7 ANSWER 18 OF 31 CAPLUS COPYRIGHT 2004 ACS on STN  
 AN 1996:95033 CAPLUS  
 DN 124:119054  
 TI Binders for the production of nonwoven material composites, and molded products therefrom  
 IN Thyssen, Stan  
 PA Teodur N.V., Neth.  
 SO PCT Int. Appl., 20 pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA German  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9530034	A1	19951109	WO 1995-EP1643	19950429
	W: AU, BR, CA, CZ, HU, JP, KR, MX, PL, US				
	RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	AU 9525234	A1	19951129	AU 1995-25234	19950429
	EP 758413	A1	19970219	EP 1995-919367	19950429
	EP 758413	B1	19990414		
	EP 758413	B2	20020313		
	R: AT, BE, DE, ES, FR, GB, IE, IT, NL, PT				
	JP 09512575	T2	19971216	JP 1995-528010	19950429
	AT 178957	E	19990415	AT 1995-919367	19950429
	ES 2133770	T3	19990916	ES 1995-919367	19950429
	CZ 290886	B6	20021113	CZ 1996-3194	19950429
	ZA 9503558	A	19960111	ZA 1995-3558	19950503
	US 5852102	A	19981222	US 1997-737049	19970128
PRAI	DE 1994-4415470	A	19940503		
WO	1995-EP1643	W	19950429		

AB A molding material consists of (a) 20-45 weight% **binder** mixture in powder form comprising (1) 30-90 weight% phenolic resin and (2) 10-70 weight% powder coating waste and (b) 55-80 weight% organic and/or **inorg.** fibers. Thus, a mixture of powdered novolak (average particle size 35  $\mu$ m) 48, pigmented epoxy powder coating material 3.4, and pigmented polyester powder coating material 10.2 g was homogenized. The resulting powder was mixed with a nonwoven fleece of >80% cotton fibers and warmed 2-3 min at 80-100° to give a storage-stable **prepreg**, several of which could be pressed at 140-160° for 100-110 s to give a form-stable thermoset. A suitable powder coating waste for use in this process was the dust collected in the air filter in the exhaust line from a spray-coating booth.

L7 ANSWER 19 OF 31 CAPLUS COPYRIGHT 2004 ACS on STN  
 AN 1995:268650 CAPLUS  
 DN 122:44417  
 TI Manufacture of laminated plates for printed wiring boards  
 IN Hasegawa, Hiroshi; Arai, Masami; Okano, Tokuo  
 PA Hitachi Chemical Co Ltd, Japan  
 SO Jpn. Kokai Tokkyo Koho, 5 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE

PI JP 06237055 A2 19940823 JP 1993-20890 19930209  
 PRAI JP 1993-20890 19930209  
 AB The boards are manufactured by immersing aramide fiber non woven fabrics in mixts. containing **inorg.** fillers, coupling agents, solvents, and **binders**, drying, then immersing thermosetting resins, drying to form **prepregs**, and heat-press compacting.

L7 ANSWER 20 OF 31 CAPLUS COPYRIGHT 2004 ACS on STN  
 AN 1994:193715 CAPLUS  
 DN 120:193715  
 TI Durable cushion materials with good release properties for laminate panel manufacture  
 IN Inoe, Ryosuke; Yasutake, Takashi  
 PA Shin Kobe Electric Machinery, Japan  
 SO Jpn. Kokai Tokkyo Koho, 3 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 05301297	A2	19931116	JP 1992-105116	19920424
	JP 2778347	B2	19980723		
PRAI	JP 1992-105116		19920424		

AB The title materials useful for copper foil-clad epoxy laminates, comprise a surface layer resistant to adhesion of resins being molded and resilient core layer and have bending modulus  $\geq 6000$  kg/cm<sup>2</sup> and permanent set  $\leq 30\%$ . A cushion material was hot-press-molded comprising fluoropolymer-impregnated fabric surface layer, glass fiber-epoxy **prepreg**, silicone rubber sheet, cement-**inorg.** fiber-**binder** resin layer, silicone rubber sheet, glass fiber-epoxy **prepreg**, and the above surface layer in that order.

L7 ANSWER 21 OF 31 CAPLUS COPYRIGHT 2004 ACS on STN  
 AN 1994:166393 CAPLUS  
 DN 120:166393  
 TI Manufacture of inorganic fiber-reinforced plastic moldings  
 IN Baba, Tooru  
 PA Nippon Muki Kk, Japan  
 SO Jpn. Kokai Tokkyo Koho, 4 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 05278164	A2	19931026	JP 1992-105933	19920331
	JP 3108519	B2	20001113		
PRAI	JP 1992-105933		19920331		

AB The title moldings, having low. d. and useful as thermal and sound insulators with simple or complex shapes, are prepared by laminating both sides of a cured mat of fiber-reinforced resin having broken fiber ends on its surfaces with **inorg.** fiber-reinforced mats containing uncured resin **binders** and hot pressing in a mold to cure the **binders**. A cured mat of glass wool-reinforced phenolic resin was laminated on both sides with phenolic resin-containing glass wool mats and cured at 200° to give a molding having d. 32 kg/m<sup>3</sup>.

L7 ANSWER 22 OF 31 CAPLUS COPYRIGHT 2004 ACS on STN  
 AN 1994:114671 CAPLUS  
 DN 120:114671  
 TI Manufacture of fiber-reinforced ceramic matrix composites  
 IN Allaire, Roger A.; Janas, Victor F.  
 PA Corning, Inc., USA

SO U.S., 7 pp.  
CODEN: USXXAM  
DT Patent  
LA English  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 5250243	A	19931005	US 1991-800995	19911202
PRAI	US 1991-800995		19911202		

AB The composites are prepared by applying a dispersion of a ceramic matrix powder in a wax-containing thermoplastic vehicle to an **inorg.** fiber reinforcement material to form a **prepreg** material, collecting the **prepreg**, molded to form prepform, and removing the **binder** for consolidation; where the preform is heated to a temperature for evaporating  $\geq 50$  weight% of the wax component prior to the collection and forming of the **prepreg**.

L7 ANSWER 23 OF 31 CAPLUS COPYRIGHT 2004 ACS on STN  
AN 1993:583180 CAPLUS  
DN 119:183180

TI Inorganic flake-containing wet-formed **prepreg** substrates with good dimensional stability

IN Matsuoka, Hiroshi  
PA Nippon Sheet Glass Co Ltd, Japan  
SO Jpn. Kokai Tokkyo Koho, 7 pp.  
CODEN: JKXXAF

DT Patent  
LA Japanese  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 05086596	A2	19930406	JP 1991-245655	19910925
	JP 3024689	B2	20000321		
PRAI	JP 1991-245655		19910925		

AB The title flakes are used at 25-70% with ceramic fibers 30-70, self-bonding organic fibers 0.5-2.0, **inorg. binders** 1.0-2.0, and anionic coagulants 0.5-1.0% in the title **prepreg** formation to give elec. insulative and flame-retardant webs. Thus, wet-forming a slurry containing ceramic fibers 30.0, poly(vinyl alc.) fibers as **binder** 1.5, muscovite mica 65.5, alumina sol 1.0, colloidal silica 1.0, and an anionic coagulant 1.0 part gave a substrate having the claimed properties.

L7 ANSWER 24 OF 31 CAPLUS COPYRIGHT 2004 ACS on STN  
AN 1992:517070 CAPLUS  
DN 117:117070

TI Manufacture of ceramic matrix composites, and the composites obtained  
IN Allaire, Roger Alphee; Janas, Victor Feliks  
PA Corning, Inc., USA  
SO Eur. Pat. Appl., 11 pp.  
CODEN: EPXXDW

DT Patent  
LA English  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 489243	A1	19920610	EP 1991-117268	19911010
	R: DE, FR, GB				
	US 5177039	A	19930105	US 1990-623075	19901206
	JP 06009277	A2	19940118	JP 1991-321605	19911205
PRAI	US 1990-623075		19901206		

AB The process comprises forming a **prepreg** of a ceramic matrix material, an organic **binder**, and multiple, directionally aligned, long-staple **inorg.** reinforcing fibers, breaking at least some of

the fibers in the **prepreg**, molding the **prepreg** to obtain a preform wherein the fibers are at least partially aligned along  $\geq 1$  preselected strong axes, and removing the **binder** and consolidating the preform by heating under pressure to obtain the high-d. composites. Fiber breakage in the consolidation process is avoided, and these composites have improved phys. integrity. A composite cylinder ring, having circumferentially oriented reinforcing fibers, was manufactured from a tape formed of Ca aluminosilicate glass powder, parallelly aligned SiC carbide fiber tow, and a thermoplastic **binder**. The tape was randomly perforated with a narrow chisel to decrease average fiber length, shaped, heated to remove the **binder**, and hot pressed at .apprx.850° and 2500 psi and further to .apprx.1340° to obtain the composite. The ring obtained, while not exhibiting the strength and high strain to failure of composites having long staple fibers, exhibits desirable strength and strain to failure characteristics, and is more resistant to consolidation breakage and/or to incomplete consolidation.

L7 ANSWER 25 OF 31 CAPLUS COPYRIGHT 2004 ACS on STN  
 AN 1992:429387 CAPLUS  
 DN 117:29387  
 TI Reinforced friction material  
 IN Sakata, Toichi; Tashiro, Ryoji; Kobayashi, Juji; Okamoto, Tadashi  
 PA Hitachi Kasei Kogyo K. K., Japan  
 SO Jpn. Kokai Tokkyo Koho, 4 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 04100885	A2	19920402	JP 1990-218519	19900820
PRAI	JP 1990-218519		19900820		
AB	In a friction material containing fibrous substance as base material, friction adjusting agent and <b>binder</b> , reinforcing material layer(s) is arranged adjacent to the central part of its thickness. Warp is prevented in molding. Thus, (1) a mixture, containing glass fibers (length .apprx.30 mm) 44.7, brass wires (.vphi. 0.3 mm, length .apprx.5 mm) 5.3, <b>inorg</b> . powder 25.5, Cu powder 2.5, phenolic resin solution 10 (as solid), rubber solution 10, S 2 and ZnO 1 weight parts and (2) phenolic resin impregnated glass-fiber <b>prepreg</b> . fabric, were used for preparation of the friction material. The <b>inorg</b> . powder contains friction adjusting agent BaSO4 30, SbCl3 45 and Ca silicate short fibers 25 weight parts.				

L7 ANSWER 26 OF 31 CAPLUS COPYRIGHT 2004 ACS on STN  
 AN 1991:681644 CAPLUS  
 DN 115:281644  
 TI Laminates for electroinsulating or decorative purposes with self-extinguishing properties  
 IN Smrcka, Jindrich; Adamovsky, Zdenek; Milichovska, Svatava; Stary, Stanislav  
 PA Czech.  
 SO Czech., 4 pp.  
 CODEN: CZXXA9  
 DT Patent  
 LA Czech  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	CS 269347	B1	19900411	CS 1988-6072	19880912
PRAI	CS 1988-6072		19880912		
AB	The title laminates are manufactured from cellulosic paper with 0.5-4.8% P bound to the glucose ring of cellulose in the groups (R10) (R20) PO (R1, R2				

= Ph, tolyl, xylyl, PhCH<sub>2</sub>), and containing PhOH-, melamine-, or urea-CH<sub>2</sub>O polymers or epoxy resins as **binders** and optionally containing **inorg.** fillers and flame retardants. Thus, a bleached kraft paper containing 4.2% P after treatment with di-Ph chlorophosphate, was impregnated with a 13% solution of low-mol.-weight resol in aqueous MeOH, dried, impregnated with a 40% solution of oil resol in PhMe-MeOH, and dried to give **prepregs**. containing 54% **binders**. Nine **prepreg** sheets were pressed with a 35- $\mu$ m Cu foil at 160° and 8 MPa for 1 h to give a self-extinguishing board.

L7 ANSWER 27 OF 31 CAPLUS COPYRIGHT 2004 ACS on STN  
 AN 1989:585878 CAPLUS  
 DN 111:185878  
 TI Heat-resistant electrically insulating **prepregs**  
 IN Maeda, Masao  
 PA Fuji Electric Co., Ltd., Japan  
 SO Jpn. Kokai Tokyo Koho, 6 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 01019632	A2	19890123	JP 1987-174168	19870713
PRAI	JP 1987-174168		19870713		

AB **Prepregs** are manufactured from ceramic paper layers (containing rough glass fibers and **inorg.** short fibers) and partially cured alkyl silicate **binders** containing **inorg.** short fibers. Thus, elec. insulating glass webs backed with alumina silica fibers were coated with a mixture of 15 parts silane coupler-treated K titanate fiber powder and 100 parts alkyl silicate **binder** (TSB 4200) in iso-PrOH and heated to give **prepreg** sheets. An elec. coil from these sheets had dielec. breakdown voltage 5.4-6, and 5-5.5 kV/mm, before and after heat cycles (room temperature to 400° 10 times), resp., vs. 1.8-2.8 and 0.8-1.2; resp., without the **binder**.

L7 ANSWER 28 OF 31 CAPLUS COPYRIGHT 2004 ACS on STN  
 AN 1989:40172 CAPLUS  
 DN 110:40172  
 TI Manufacture and uses of heat-resistant thermoplastic laminates  
 IN Kovacikova, Magdalena; Vasiljev, Roman; Benko, Pavol  
 PA Czech.  
 SO Czech., 5 pp.  
 CODEN: CZXXA9  
 DT Patent  
 LA Slovak  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	CS 248498	B1	19870212	CS 1985-7991	19831101
PRAI	CS 1985-7991		19831101		

AB Heat-resistant (at 160-250°) cured thermoplastic laminates, useful as elec. insulators for printed circuits, aircraft, and rockets, comprise **inorg.** or organic fibers or textile reinforcement impregnated with a curable polyimide **binder** modified with 1-30% ketone, e.g., Me<sub>2</sub>CO or MEK, optionally mixed with an epoxy or phenolic resin. Thus, 100 g 40% polyimide solution, prepared from 2.5 mol 4,4'-diaminodiphenylmethane bismaleimide and 1 mol 4,4'-diaminodiphenylmethane in 3:2 N-methyl-2-pyrrolidone-PhMe mixture at 105° for 4 h, and 15 g Me<sub>2</sub>CO were set aside at 25-30° for 3 h, impregnated into a glass fabric to 38-40% solids, and evaporated at 155-160° to form **prepregs**, which were laminated at 170° and 7 MPa pressure for 2 h and cured at 200° for 48 h to give a laminate showing good heat resistance at



180-200°.

L7 ANSWER 29 OF 31 CAPLUS COPYRIGHT 2004 ACS on STN  
AN 1988:23095 CAPLUS  
DN 108:23095  
TI Abrasion-resistant friction disks  
IN Imasaka, Yoshinobu; Sumihara, Masanori; Komeno, Hiroshi  
PA Matsushita Electric Industrial Co., Ltd., Japan  
SO Jpn. Kokai Tokkyo Koho, 4 pp.  
CODEN: JKXXAF  
DT Patent  
LA Japanese  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 62209236	A2	19870914	JP 1986-48882	19860306
PRAI	JP 1986-48882		19860306		

AB The title disks are prepared by molding compns. containing long organic or **inorg.** fibers and organic **binders**. Thus, long carbon fibers were impregnated with an epoxy resin to give a **prepreg** which was pressed in a mold for 2 h at 130° to give a friction disk with fiber content 75%. The frictional abrasion loss of this disk was  $3.0 + 10^{-8}$  cm<sup>2</sup>/kg-m, vs.  $4.5 + 10^{-7}$  cm<sup>2</sup>/kg-m using short carbon fibers instead of long carbon fibers.

L7 ANSWER 30 OF 31 CAPLUS COPYRIGHT 2004 ACS on STN  
AN 1987:535277 CAPLUS  
DN 107:135277  
TI Manufacture of heat-resistant **prepregs**  
IN Hosokawa, Etsuo; Hashimoto, Hiroshi  
PA Showa Electric Wire and Cable Co., Ltd., Japan  
SO Brit. UK Pat. Appl., 9 pp.  
CODEN: BAXXDU  
DT Patent  
LA English  
FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	GB 2180857	A1	19870408	GB 1986-17440	19860717
	GB 2180857	B2	19900214		
	JP 62020534	A2	19870129	JP 1985-159417	19850719
	JP 06045709	B4	19940615		
	JP 63017939	A2	19880125	JP 1986-162724	19860710
	JP 07088431	B4	19950927		
PRAI	JP 1985-159417		19850719		
	JP 1986-162724		19860710		

AB A heat-resistant **prepreg** is manufactured by impregnating a heat-resistant substrate comprising heat-resistant organic or **inorg** fibers with a heat-resistant mixture containing  $\geq 10$  weight% borosiloxane resin and drying the impregnated substrate at 200-300° to such an extent that  $\geq 20\%$  of the hydrocarbyl groups bonded to the Si atoms in the borosiloxane resin composition prior to the impregnating and drying steps will remain after the heat treatment. Thus, ceramic paper (500- $\mu$ m thick and formed from alumina fibers) was impregnated with a mixture comprising 10 weight parts TSR-116 (silicone solution) and 90 weight parts borosilicone resin, heated at 300° for 1 h to expel the organic **binder**, and dried at 250° for 1 h to give a **prepreg** showing initial tensile shear strength (in self adhesion) 99 kg/cm<sup>2</sup> and final shear strength (in self adhesion after aging at 200° for 500 h) 92 kg/cm<sup>2</sup>, compared with 110 and 0, resp., for a similar **prepreg** manufacture containing no borosiloxane.

L7 ANSWER 31 OF 31 CAPLUS COPYRIGHT 2004 ACS on STN

AN 1978:192306 CAPLUS  
 DN 88:192306  
 TI Fiber-reinforced laminates  
 IN Ito, Takashi; Maekawa, Masao  
 PA Kanebo, Ltd., Japan  
 SO Jpn. Kokai Tokkyo Koho, 6 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 52148561	A2	19771209	JP 1976-66821	19760607
	JP 60011742	B4	19850327		
PRAI	JP 1976-66821		19760607		

AB Laminates with good punching quality were prepared from **prepregs** obtained by impregnating thermoset varnishes on nonwoven sheets containing cured phenolic resin fiber and 5-70% **inorg.** fiber (length <1mm, diameter <20  $\mu$ ) or particles (diameter <30  $\mu$ ). For example, a wet sheet (basis weight 180 g/m<sup>2</sup>) was formed from cured phenolic resin fiber (length 2 mm) and dehydrated gypsum (needles, length 100-300  $\mu$ , diameter 1-2  $\mu$ ) in 9:10 ratio in aqueous slurry, using resorcinol resin as **binder** and Al<sub>2</sub>(SO<sub>4</sub>)<sub>3</sub> as fixer, dried, pressed at 150°/5 kg/cm<sup>2</sup> for 1 min, impregnated with 30% formaldehyde-phenol copolymer [9003-35-4] varnish, dried at 100° (40% resin in **prepreg**), and pressed (as 9-ply overlay) at 150°/150 kg/cm<sup>2</sup> for 45 min to give a 1.6 mm-thick laminate with good punching quality (ASTM D 617) at 100°.

## Refine Search

### Search Results -

Term	Documents
(8 AND 9).PGPB,USPT,DWPI.	5
(L8 AND L9).PGPB,USPT,DWPI.	5

Database:

US Pre-Grant Publication Full-Text Database  
 US Patents Full-Text Database  
 US OCR Full-Text Database  
 EPO Abstracts Database  
 JPO Abstracts Database  
 Derwent World Patents Index  
 IBM Technical Disclosure Bulletins

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L10

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### Search History

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<i>DB=PGPB,USPT,DWPI; PLUR=YES; OP=ADJ</i>			
<u>L10</u>	18 and 19	5	<u>L10</u>
<u>L9</u>	prepreg or circuit board	258832	<u>L9</u>
<u>L8</u>	16 and 17	89	<u>L8</u>
<u>L7</u>	inorganic binder	5866	<u>L7</u>
<u>L6</u>	13 and 14	11041	<u>L6</u>

<u>L5</u>	colloidal solution	5810	<u>L5</u>
<u>L4</u>	low melting point	25845	<u>L4</u>
<u>L3</u>	glass	1014098	<u>L3</u>
<u>L2</u>	short same (fibers or fibres)	50686	<u>L2</u>
<u>L1</u>	nonwoven or unwoven or non-woven or unwoven	101812	<u>L1</u>

END OF SEARCH HISTORY

## Refine Search

### Search Results -

Term	Documents
(3 AND 1 AND 2).PGPB,USPT,DWPI.	7
(L1 AND L2 AND L3 ).PGPB,USPT,DWPI.	7

Database:

US Pre-Grant Publication Full-Text Database  
 US Patents Full-Text Database  
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*DB=PGPB,USPT,DWPI; PLUR=YES; OP=ADJ*

<u>L5</u>	11 and 12 and 13	7	<u>L5</u>
<u>L4</u>	low same (melting point) same glass	6467	<u>L4</u>
<u>L3</u>	low same melting point same glass	6467	<u>L3</u>
<u>L2</u>	inorganic same binder	30144	<u>L2</u>
<u>L1</u>	prepreg	17061	<u>L1</u>

END OF SEARCH HISTORY